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A SCALE TO MEASURE THE ATTITUDE OF RICE FARMERS TOWARDS INDIGENOUS TRADITIONAL KNOWLEDGE PRACTICES

V. MEENAKSHI[1] & J. VENKATA PIRABU[2]

[1]Research Scholar, Department of Agricultural Extension and Rural Sociology,
Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu, India

[2]Professor (Agricultural Extension), Agricultural Research Station, Bhavanisagar, Erode, Tamil Nadu, India

ABSTRACT

The present study aims to develop an attitude scale on indigenous traditional knowledge practices for rice farming. The purpose of scale construction is to design a questionnaire that provides a quantitative measurement of a theoretical variable. The method of Equal appearing interval scale was used to develop the attitude scale. A sum of 55 statements were selected by reviewing the literature and given to the judges for offering their opinion. Those statements were then formulated using Equal appearing interval scale method and based upon 'Scale value' and 'Q value' obtained for each statement, 9 statements were retained on the final scale. The reliability and validity of the scale indicates its precision and consistency of the results. These statements were administered for assessing the attitude of rice farmers towards indigenous traditional knowledge practices.

KEYWORDS: Attitude Scale, Indigenous Traditional Knowledge Practices, Equal Appearing Interval Method, Rice Farmers

INTRODUCTION

Indigenous agricultural practices play a key role in the design of sustainable and eco-friendly agricultural systems, that the rural population will accept, develop and maintain innovations and interventions. (Atte, 1989) It is one of the major sources that are not utilized to their capacity. It is an unwritten body of knowledge. There is no systematic record to describe what is, what it does, how it does, means of changing it, its operations, its boundaries and its applications. It is held in different brains, languages and skills in as many groups, cultures and environments. (Somasundaram, 1995) observed that indigenous knowledge if identified, modified suitably and accepted, can definitely be the solution for the contemporary thinking of attaining sustainable agriculture.(Parvathi *et al*., 2000) in her study said that indigenous post harvest practices were perceived by the farm women as economically feasible and user-friendly. The indigenous post harvest tools used by the women were made by local artisans, using low cost resources, which were locally available and they were easy to repair and to maintain and they did not require a higher degree of technical skill. Adoption of indigenous agricultural practices on rice cultivation was found to be higher with a majority of 35 IAPs (53.03%) adopted by more than 50 percent of respondents of which 31 IAPs were rational and 4 were irrational. The remaining 31 IAPs (46.97%) were adopted by

less than 50 percent of respondents. Of these, 22 were rational and 9 were irrational (Sundaramari and Ranganathan 2013). Hence, there is insurmountable task put upon the people of India to collect, preserve and adopt indigenous agricultural practices, so as to reduce the pressure on external inputs, to reduce the cost of cultivation and to propagate eco-friendly atmosphere in agricultural scenario.

RESEARCH METHODOLOGY

To measure the degree of the respondents' favourableness and unfavourableness to the indigenous traditional knowledge practices on rice farming, attitude scale was constructed by following the method of Equal appearing scale interval developed by Thurstone (1946). Sixty items on indigenous traditional knowledge practices were collected from relevant literature, engaging elaborate discussion with scientists, extension officials and officials of the State department of agriculture.

After thorough scrutinization, 55 items were selected to form the universe of contents along with domains of indigenous traditional knowledge practices for respondents towards the attitude items. Those 55 items were given for judges opinion on a 'five' point continuum ranging from strongly agree to strongly disagree and was administered to 52 judges comprising scientists belonging to State Agricultural Universities, ICAR research institutes and extension officials of the State department of agriculture. Out of 52 judges, 30 responded by sending their judgements. Based on the judgements the scale values and Q values for each statement were calculated by employing the equal appearing scale interval formula as suggested by Thurstone and Chave (1946)

$$S = l + \left[\frac{0.05 - \Sigma pb}{pw}\right] i$$

Where,

S = the median or scale value of the statement

l = the lower limit oj the interval in which the median falls

Σpb = the sum of the proportions below the interval in which the median falls and

i = the width of the interval and in assumed to equal to 1.0

$Q = C_{75} - C_{25}$

Where,

Q = interquartile range

C_{25} = the 25th centile

$$C_{25} = l + \left[\frac{0.25 - \Sigma pb}{pw}\right] i$$

C_{75} = the 75th centile

$$C_{75} = l + \left[\frac{0.75 - \Sigma pb}{pw}\right] i$$

Selection of Attitude Items

The attitude items to be included in the final attitude scale were selected based on those items with high scale values and smaller Q values. In table 1 the second column indicated the statement number. The scale values were arranged in the descending order of magnitude in the fourth column with corresponding Q – values in the third column. The differences between successive scale values were computed and entered in the fifth column. The cumulative total of these computed differences were worked out in the sixth column. Considering the time limitation of the respondents, it was decided to select nine statements to constitute the final attitude scale. Since, the selected scale values should have equal appearing interval and distributed uniformly along the psychological continuum, it was necessary to form "nine" compartments so as to select "nine" statements at the rate of one statement in each compartment.

The basis for forming the compartments is that, each compartment should be equally spaced in the continuum. For this purpose, the difference between the highest scale value (4.817) and the lowest scale value (1.017) is divided by nine. Since, it was decided to select nine statements and this value (0.422) forms the width of the class interval. The second interval was worked out by adding the value 0.422 with the width of the class interval. So the second interval comes around 0.844. Then again adding the value 0.422 with 0.844 gives the third interval. Subsequently, all the nine intervals were worked out. These equal appearing class intervals form the seventh column. The width / value of equal class interval cutting the nearest or closest compartment cumulative value of difference forms the compartment. Subsequently nine compartments were formed.

Table 1: Scale Values and Q Values of Each Statement

S. No	Statement No.	Scale Value	Q Value	Difference Between Successive Scale Values	Cumulative Value of the Differences	Equal Appearing Class Intervals	Compartments
1	**32**	4.817	0.722				
2	22	4.785	0.893	0.032	0.032		
3	54	4.785	0.809	0.000	0.032		
4	5	4.711	0.954	0.074	0.106		
5	8	4.666	0.958	0.045	0.151		
6	7	4.616	1.059	0.050	0.201		
7	1	4.528	0.809	0.088	0.289		
8	12	4.500	1.875	0.028	0.317		
9	37	4.381	0.981	0.119	0.436	0.422	**I**
10	**2**	4.357	0.535	0.024	0.460		
11	3	4.250	1.025	0.107	0.567		
12	19	4.250	0.874	0.000	0.567		
13	10	4.249	0.874	0.001	0.568		
14	23	4.182	0.682	0.067	0.635		
15	45	4.152	0.651	0.030	0.665		
16	31	4.125	0.625	0.027	0.692		
17	43	4.038	1.576	0.087	0.779		
18	34	4.035	0.535	0.003	0.782		
19	25	4.017	0.517	0.018	0.800		
20	17	4.000	0.625	0.017	0.817		
21	13	4.000	0.625	0.000	0.817		
22	**14**	3.966	1.030	0.034	0.851	0.844	**II**
23	28	3.954	1.415	0.012	0.863		
24	49	3.917	1.291	0.037	0.900		
25	20	3.900	0.600	0.017	0.917		
26	27	3.874	1.624	0.026	0.943		
27	38	3.868	0.826	0.006	0.949		
28	47	3.868	0.826	0.000	0.949		

Table 1: Contd.,							
29	51	3.800	1.426	0.068	1.017		
30	35	3.772	1.328	0.028	1.045		
31	53	3.627	1.527	0.145	1.190	1.266	**III**
32	**44**	3.438	1.122	0.189	1.379		
33	55	3.333	1.145	0.105	1.484	1.689	**IV**
34	42	2.917	1.285	0.416	1.900		
35	**33**	2.666	1.350	0.251	2.151	2.111	**V**
36	11	2.106	1.494	0.560	2.711	2.533	**VI**
37	**21**	2.063	0.938	0.043	2.754		
38	46	2.050	0.750	0.013	2.767		
39	39	2.050	0.749	0.000	2.767		
40	15	2.000	0.536	0.050	2.817		
41	36	2.000	1.142	0.000	2.817		
42	48	2.000	0.833	0.000	2.817		
43	52	1.944	0.555	0.056	2.873		
44	50	1.944	0.555	0.000	2.873		
45	30	1.833	1.541	0.111	2.984	2.956	**VII**
46	**40**	1.818	0.722	0.015	2.999		
47	18	1.750	0.874	0.068	3.067		
48	**29**	1.562	0.995	0.188	3.255	3.378	**VIII**
49	41	1.333	1.145	0.229	3.484		
50	6	1.289	0.923	0.044	3.528		
51	16	1.250	0.874	0.039	3.567		
52	4	1.246	0.974	0.004	3.571		
53	9	1.215	1.571	0.031	3.602		
54	24	1.214	0.809	0.001	3.603		
55	**26**	1.017	0.517	0.197	3.800	3.800	**IX**

RESULTS AND DISCUSSIONS

Next stage was to select the attitude items from the nine compartments. Based on the criteria already mentioned, items having higher scale value and lower Q-value were selected from the first compartment. Then, for the selection of items from the subsequent compartments, same procedure was followed.

Adequate care was taken to ensure that the selected items represented the universe of content. Accordingly, nine statements were selected. The selected statements were given in table 2.

Table 2: Selected Attitude Statements

S. No	Statement No.	Statement
1.	2	Indigenous traditional knowledge practice is eco-friendly
2.	32	Indigenous traditional knowledge practice gives more impact on small and marginal farmers
3.	40	Conservation of traditional rice varieties is possible only through indigenous traditional knowledge practice
4.	21	Indigenous traditional knowledge practices are simple to understand and easy to follow
5.	26	Indigenous traditional knowledge practice is locally available

Table 2 - Contd.,		
6.	14	Indigenous traditional knowledge practice do not ensures livelihood security
7.	44	Indigenous traditional knowledge practice often fails
8.	33	Indigenous traditional knowledge practice cannot be fitted to large area of cultivation
9.	29	Indigenous traditional knowledge practice has diminutive reach

Reliability of the Scale

The reliability of the scale was determined by 'split- half' method. The split-half method seemed to be one of the best methods for measuring reliability. The selected nine attitude statements were divided into two halves containing four statements in one set and five statements in the other by odd even method (Singh, 2008). The two halves were administered separately to 20 respondents in a non sample area. The scores were subjected to product moment correlation test in order to find out the reliability of the half-test. The half-test reliability coefficient (r) was 0.540, which was significant at five per cent level of probability. Further, the reliability coefficient of the whole test was computed using the Spearman-Brown Prophecy formula. The whole test reliability (rtt) was 0.708. According to Singh (2008), when the mean scores of the two groups are of narrow range, a reliability coefficient of 0.50 or 0.60 would suffice. Hence, the constructed scale is reliable as the reliability rating was greater than 0.60.

Content Validity of the Scale

It referred to the representativeness or sampling adequacy of the content of a measuring instrument (Kerlinger, 2007). Content validation was carried out by subjecting the selected nine attitude items to judges opinion. Experts in the selected field were the judges. They were asked to indicate the extent to which each attitude item covered the domains of indigenous traditional knowledge practices or judge each item for its presumed relevance to the property being measured. The responses were obtained on a four-point continuum of 'most adequately covers', 'more adequately covers', 'less adequately covers' and 'least adequately covers'. Scores of 4, 3, 2 and 1 were given for the points on the continuum respectively. Totally 20 judges responded by sending their judgements. The mean score (2.5) was fixed as the basis for deciding the content validity of the scale i.e. if the overall mean score of the attitude items as rated by the judges was above 2.5, the scale will be declared as valid and if not otherwise. In the present case, the overall mean score was worked out as 3.0 (most adequately covers and more adequately covers). Therefore, the constructed attitude scale is said to be valid.

CONCLUSIONS

The scale was administered in a five point continuum as strongly agree, agree, undecided, disagree and strongly disagree. Favourable statements (statements 1, 2, 3, 4 and 5) to the object indigenous traditional knowledge practices were considered and scored in the following pattern, strongly agree, agree, undecided, disagree and strongly disagree and received the scores as 5, 4, 3, 2 and 1 respectively. For those items that were negative (statements 6, 7, 8 and 9) to the object indigenous traditional knowledge practices, the scoring procedure was reversed. Score was obtained for each item. All the scores obtained by individual respondents were summated in order to yield attitude score for the individuals concerned. The maximum score was 45 and minimum score was 9. Using cumulative frequency values, the respondents were classified into most favourable, favourable and less favourable attitude towards indigenous traditional knowledge practices. Attitude of indigenous traditional knowledge practices was used as an independent variable for testing its

relationship with the awareness, adoption and impact of rice farmers towards indigenous traditional knowledge practices in rice farming.

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